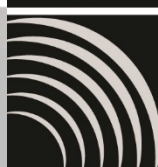


For Public Safety, By Public Safety

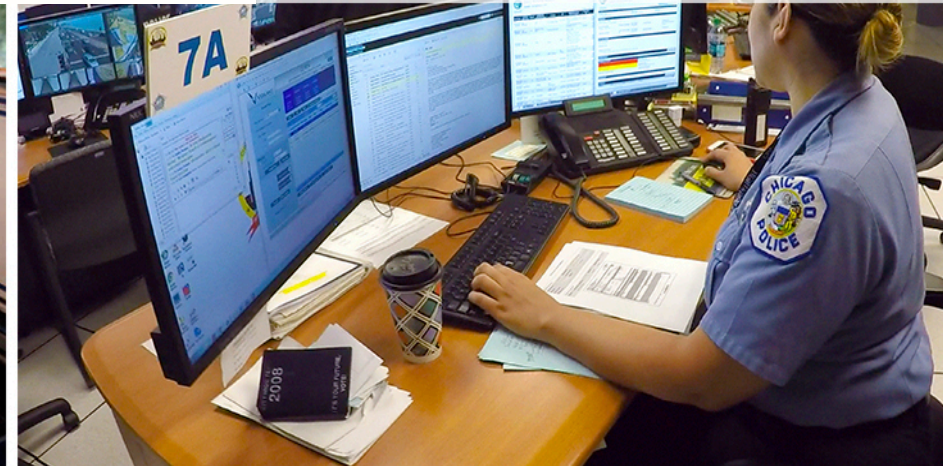
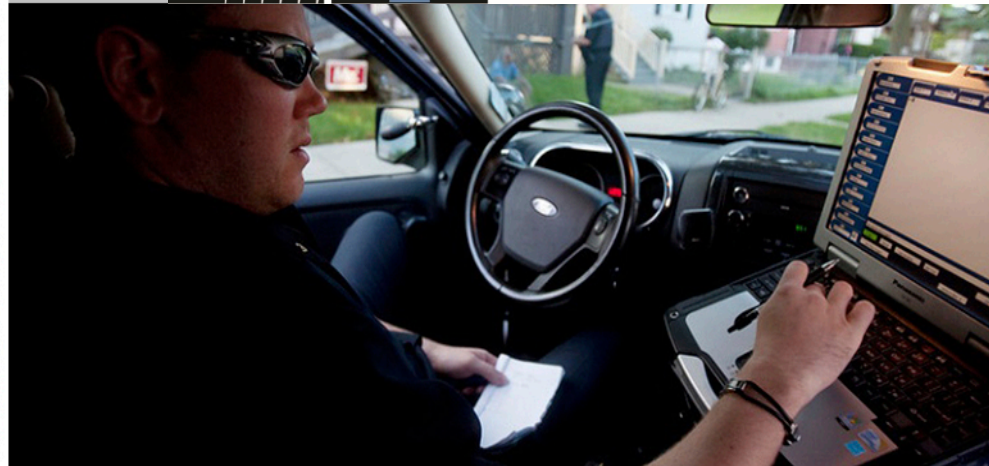


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FirstNet: Our Nation's Public Safety Network

Brent Williams, Paramedic

Senior EMS Advisor

September 17, 2019

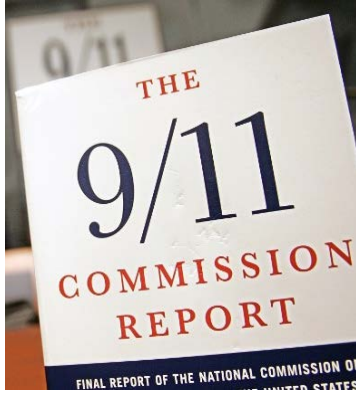


The FirstNet Journey



2001 9/11 attacks

Radio communication challenges affect first responders



2004 9/11 Commission

- Recommends national radio spectrum for public safety purposes
- Public safety unites to advocate for nationwide broadband network



2012 The First Responder Network Authority

Independent agency to deploy Nationwide Public Safety Broadband Network



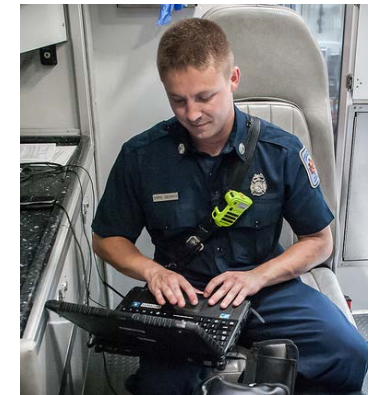
2012-16 Outreach and Consultation

- Governors identify FirstNet single points of contact
- Consultation in all 56 states/territories
- FirstNet works with states to collect and validate users and coverage data



2016-17 Partnership and State Plans

- Network RFP released
- Award to AT&T
- Delivery of 56 state/territory plans
- 56 Governors Opt-In decisions



2018-beyond Advancing the FirstNet Experience

- Engage and collaborate with public safety and industry
- Develop and promote Public Safety Communications roadmap
- Invest in the network

What is FirstNet?



- Established in 2012 by Congressional Act
- Federal Agency, Part of NTIA, U S Dept of Commerce
- Mission: to establish, operate, and maintain an interoperable public safety broadband network
- Resources: \$7 billion and 20 MHz of spectrum for an LTE network

An Innovative Public-Private Partnership

First Responder Network Authority

- Partner oversight and support
- Public safety advocate
- Technical expertise
- Innovation strategy and investment



AT&T

- Nationwide core
- RAN build-out
- Adoption and customer care (24x7x365)
- Security operations center
- Mission-critical services
- App and device ecosystems



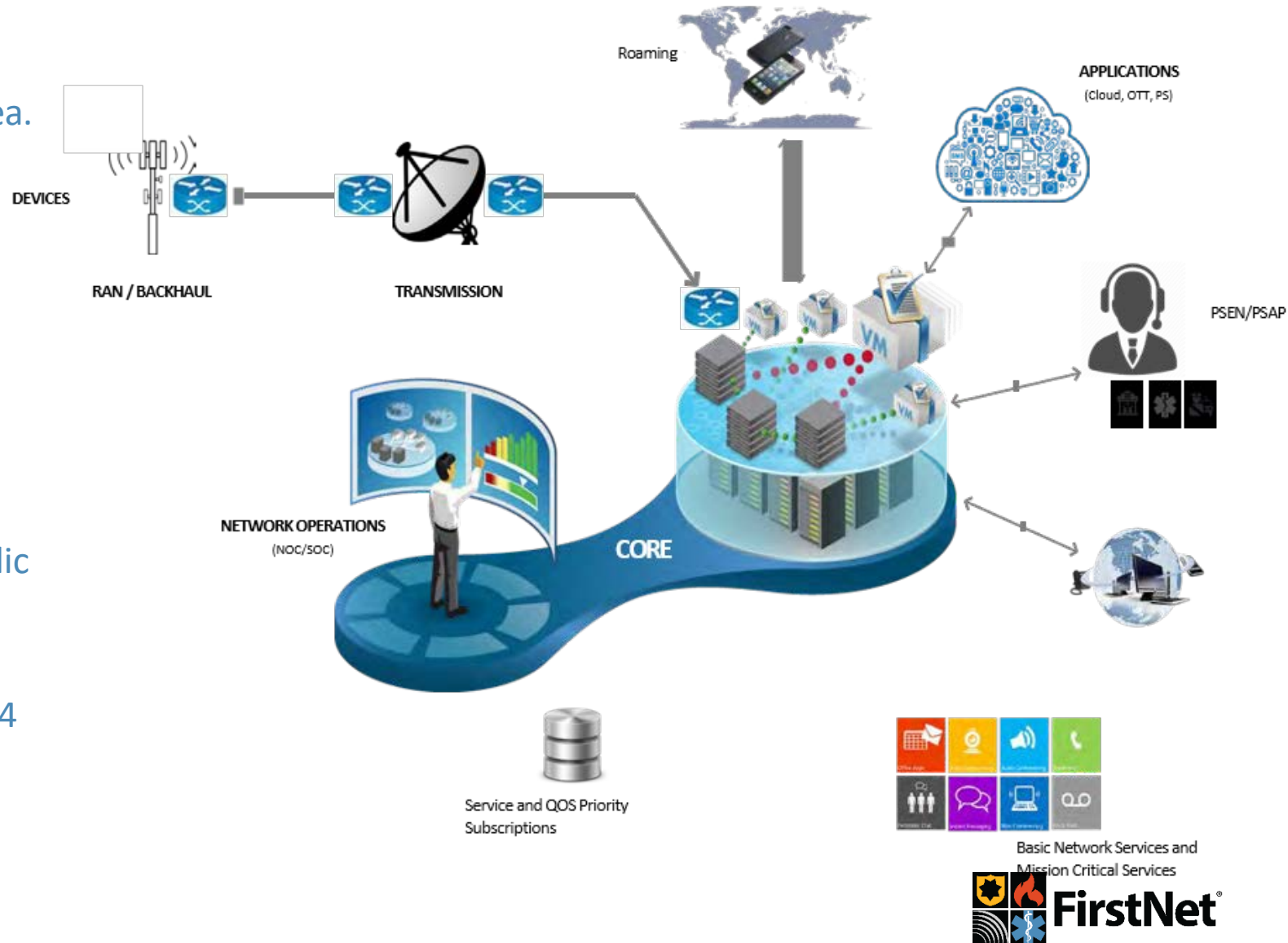
QPP (aka “First Priority”)

- **Quality of Service (QoS):** Minimum/maximum service quality parameters
- **Priority:** Gives preferred access to network resources
- **True Preemption:** Terminates/relocates non-primary/commercial users so high-priority users have access



Dedicated FirstNet Public Safety Core

- FirstNet Core available March 2018
 - Check with an AT&T FirstNet specialist for service availability dates in your area.
- Based on standardized Evolved Packet Core (EPC) and IP Multimedia Subsystem (IMS)
- FirstNet Core to provide:
 - Basic network services
 - ***QoS, priority and preemption across ALL AT&T LTE bands***
 - Enabled secure access to private/public networks, PSEN/PSAP, enterprise and cloud applications
 - Enables RAN sharing between Band 14 and AT&T commercial bands (MOCN)
 - Will support future services for Public Safety (Mission Critical, LBS)
 - Encryption from end-to-end



State Plans and Governors' Decisions

50 states, 5 territories, District of Columbia



Focus in 2019

- Expanding FirstNet
- Driving innovation
- Public safety engagement



Strategy: Aligning and Guiding Our Efforts for Public Safety



STRATEGIC GOAL

Deploy, maintain, and operate a nationwide public safety broadband network

MISSION

We are a catalyst for advancing the nationwide public safety broadband network

VISION

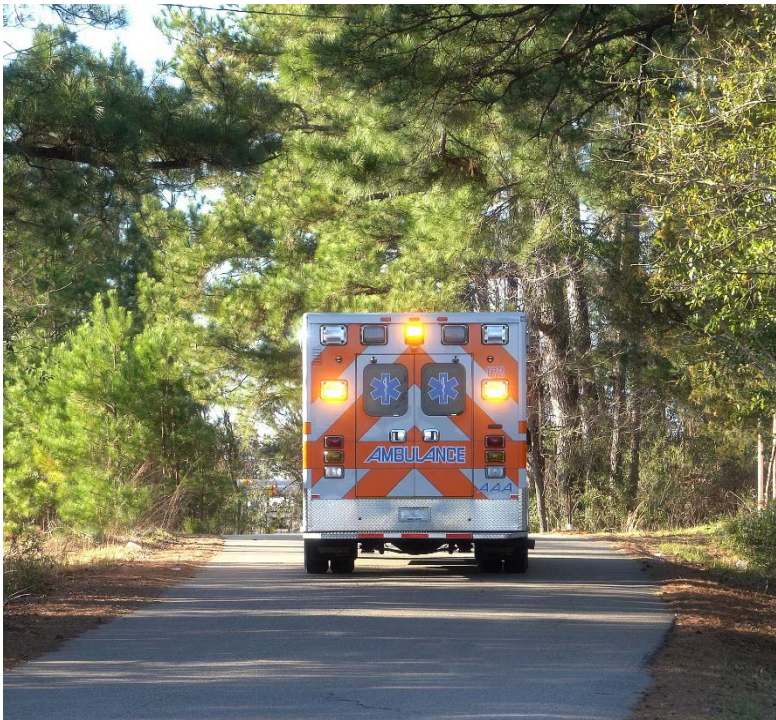
Create a dedicated and differentiated broadband communications experience that transforms public safety operations to save lives

- **Guides our actions now through 2022 so we're aligned/able to meet our mission for public safety**
- **Metrics-based so we can validate we're meeting our goals**
- **Living document gives direction and structure, while encouraging growth, change, and collaboration**

Vision to Reality: A Catalyst for Public Safety Communications



VISION: Create a dedicated and differentiated broadband communications experience that transforms public safety operations to save lives



PUBLIC SAFETY'S NEEDS



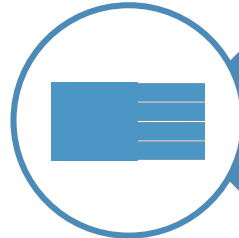
ROADMAP



INVESTMENT

First Responder Network Authority Roadmap Overview

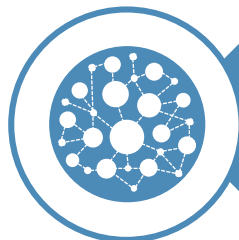
The Roadmap expresses how the FirstNet Authority will work to advance the FirstNet network over a multiyear horizon.



Provides a **technology framework** to understand all of the components and capabilities of the FirstNet Experience



Reflects **public safety's feedback** and needs based on a multitude of Roadmap engagements with the public safety community



Incorporates **analysis** of industry trends and drivers as well as AT&T's roadmap for the Network



Identifies the **priorities that will guide investments** and other opportunities based on FirstNet Authority analysis

First Responder Network Authority Roadmap Domains



Core

- EPC
- IMS Core
- Services Platforms
- App Servers
- Service Enablers



Coverage & Capacity

- Macro Coverage
- Capacity
- In-building Solutions
- Temporary/On-Demand Coverage
- Range Extension
- Device-to-Device
- Air-to-Ground
- Maritime Operations
- Availability/Reliability/Resiliency/Hardening



Situational Awareness

- Location Services
- Sensors
- Wearables
- Cameras/Video
- Mapping/Geographic Information System (GIS)
- Data Analytics/Artificial Intelligence



Voice Communications

- Mission Critical Push-to-talk (MCPTT)
- PTT Interconnection



Secure Information Exchange

- Data Access
- Data Sharing
- Cybersecurity
- Identity, Credential and Access Management (ICAM)/Single Sign-On



User Experience

- Priority Services
- Applications
- Devices
- Accessories
- Hands Free Operations
- Augmented Virtual Reality
- Heads-Up Display

Roadmap Content Release

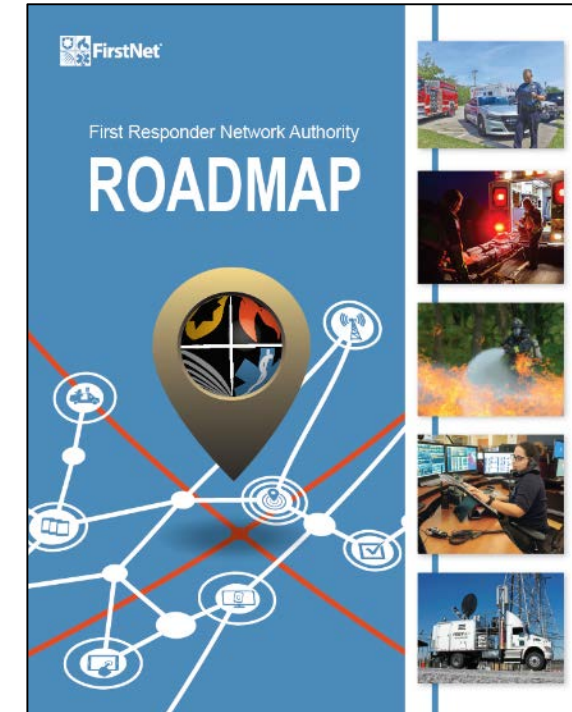
Infographic



FAQs



FirstNet Authority Roadmap



Available at FirstNet.gov/Roadmap

- Real Time two way video from patient/EMS Scene to a hospital/physician
- Transmission, in real time and continuously, all of the data provided by a typical “12-lead monitor” (rhythm strip, vital signs, SPO2, CO2 levels, etc.)
- Supporting all of the communication needs of new Community Paramedicine programs.
- Far better “Situational Awareness” including all public safety assets at a scene.
- Medical Imaging to aid in evaluation and diagnosis. Essentially creating a “Smart Ambulance” that can gather diagnostic data for transmission to a higher level of care for reading and evaluation. This can include ultrasound for trauma patients; Even something that requires huge amounts of data to be transmitted...such as CT Scans....

Happening today!



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Differentiating Shock

By [Stephanie Louka, MD, AEMT, and Thomas Hudson, NRP, CCP-C](#)

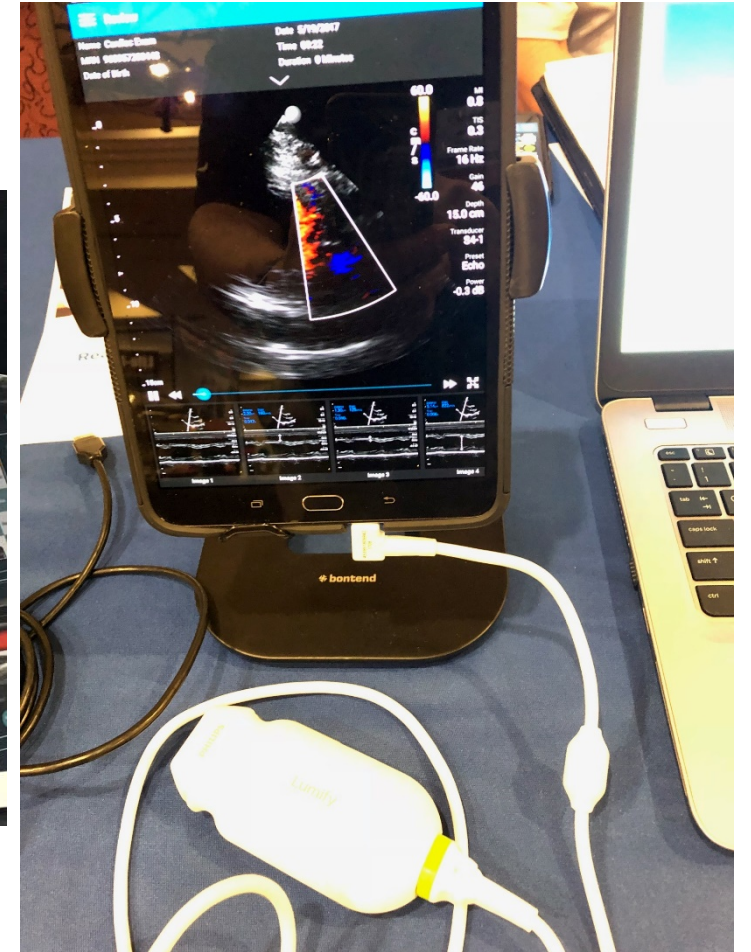
EMS World Magazine, Aug 1, 2018



- **Point-of-care ultrasonography**, or POCUS, has evolved over the last 20 years to become a mainstay of emergency department diagnosis and treatment. Whether assessing obstetric patients, visualizing abdominal bleeding, or guiding invasive procedures, the practice of emergency medicine continues to find **new, innovative applications for this technology**.
- A more recent development, however, is the migration of POCUS from the emergency department into the prehospital setting. While as of 2014 North American EMS agencies had an ultrasound adoption rate of only 4%,² there are indications that many **progressive EMS agencies** are rapidly coming to use POCUS as part of their **standard practice**. This change has been so rapid that just this year, the nation's first university-level POCUS course designed specifically for **prehospital providers** debuted at the Virginia Commonwealth University School of Medicine.³
- *EMS World Magazine Aug 1, 2018, "Differentiating Shock"*

Ultrasound in the field

App and devices available now, that allow for capture and transmission of live, moving ultrasound images, and two way voice communication.



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“Blue Tooth Breath Sounds”

New “Electronic” Stethoscopes allow for BlueTooth transmission of sounds via FirstNet connectivity for expert evaluation



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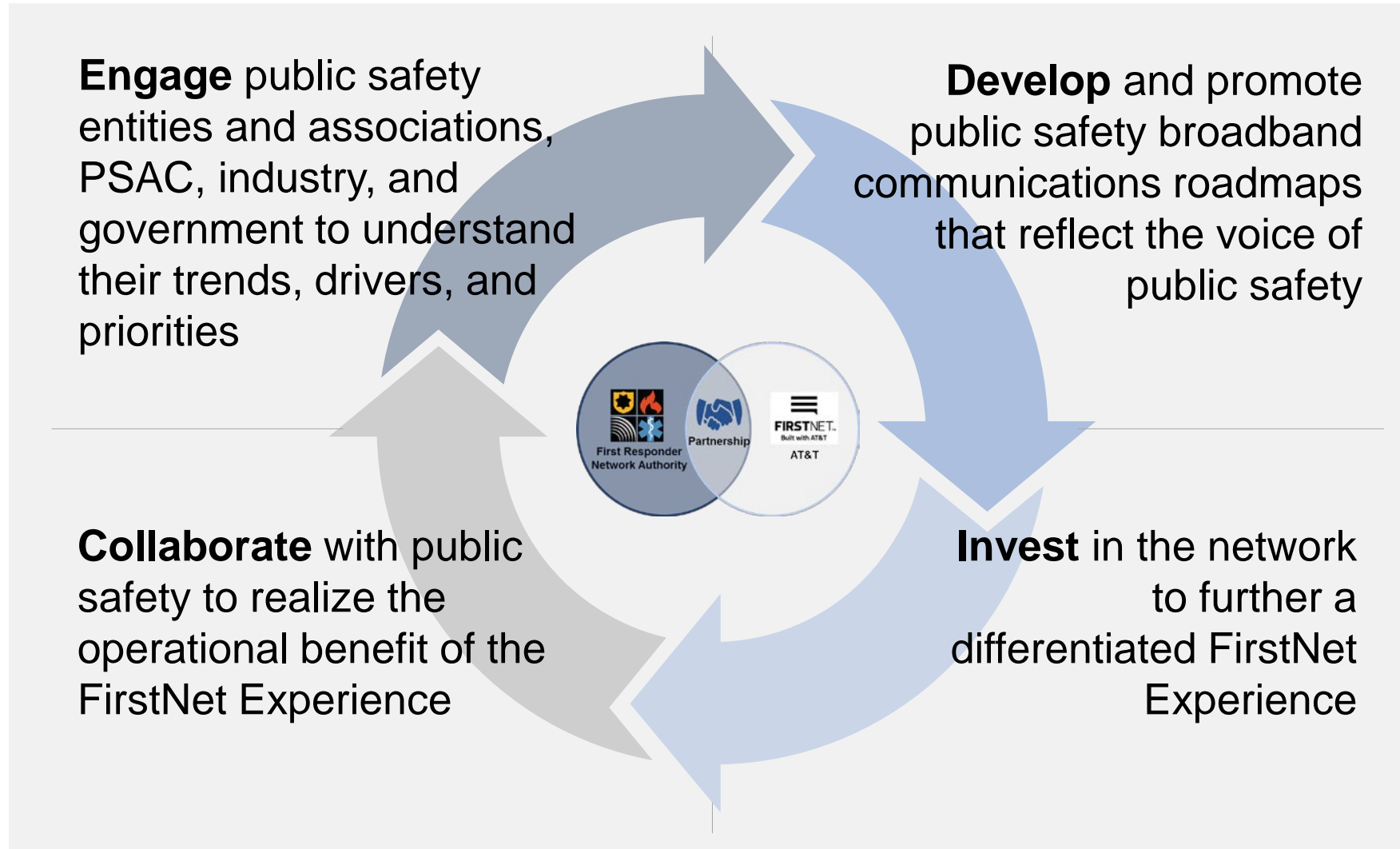
- Cross checking of medications prior to administration is becoming the norm.
- Rather than seek out an in-person crew member to verify the medication, Use a video link to perform that function remotely.

- **Announced Feb 14, 2019 by DHHS “Innovation Center”**
- **New payment model called ET-3**
- **A model program, that will solicit agreements with up to 40 entities in each of three rounds**
- **Applications to be sought in Fall 2019**
- **Start date planned for Jan 2020**

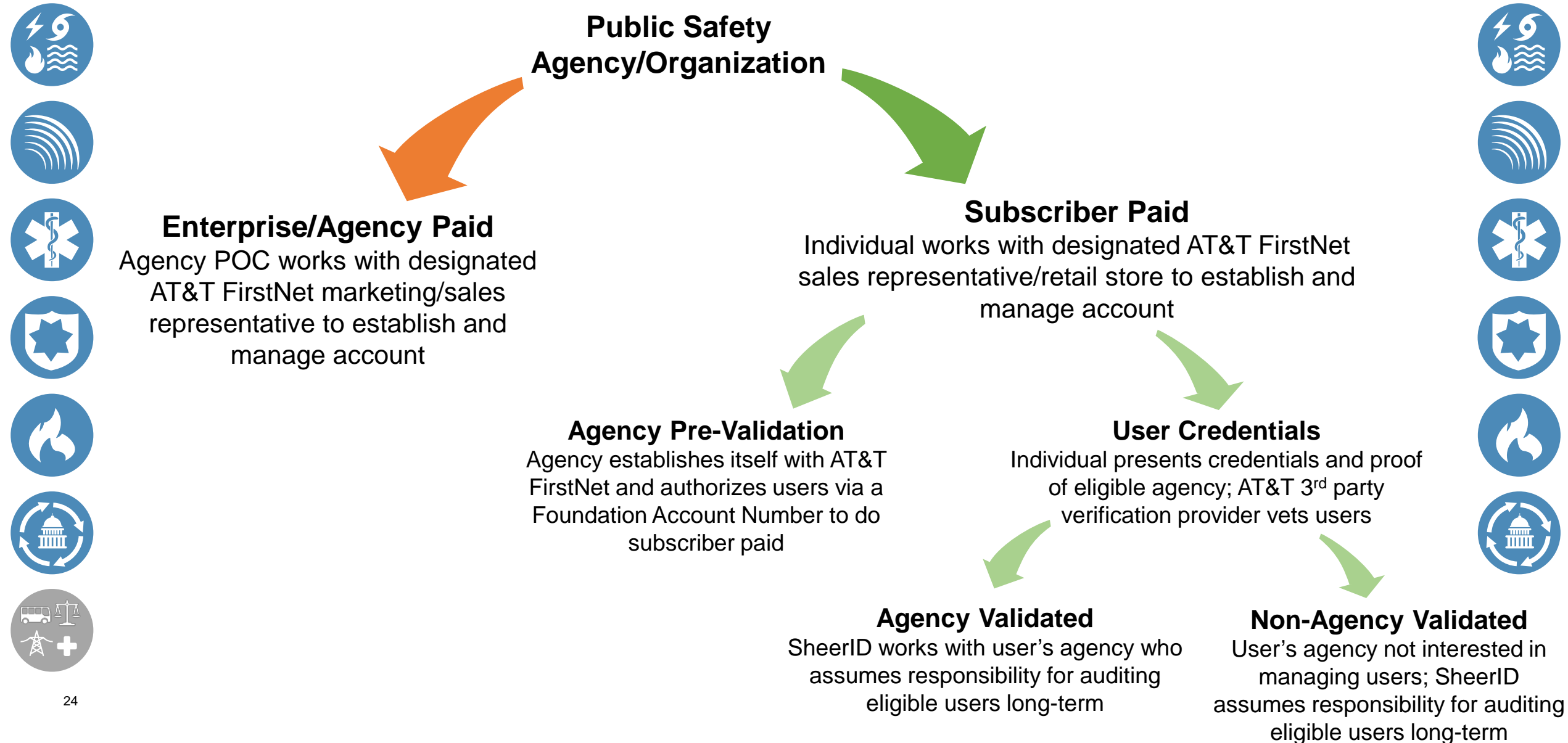
Under the ET3 model, the Centers for Medicare & Medicaid Services (CMS) will pay participating ambulance suppliers and providers to:

- 1) transport an individual to a hospital emergency department (ED) or other destination covered under the regulations
- 2) transport to an alternative destination (such as a primary care doctor's office or an urgent care clinic)
- 3) provide treatment in place with a qualified health care practitioner, either on the scene or connected using telehealth.

Advancing the FirstNet Experience



Onboarding Process



FirstNet by the Numbers



750K+ FirstNet connections



~9,000

Public safety agencies subscribed



75+ FirstNet Ready™ devices

~650

Markets¹ with Band 14 spectrum



FASTER

than any commercial network²



~65%

Band 14 coverage completion; well ahead of schedule



50+ Unique apps in the FirstNet App Catalog



75 Dedicated deployable network assets, including 3 Flying COWs™



175+

Asset deployments for planned and emergency events this year





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Questions, Comments, Concerns?

Brent Williams

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